UNSUPERVISED INCREMENTAL ADAPTATION USING MAXIMUM LIKELIHOOD SPECTRAL TRANSFORMATION

Abstract of the Disclosure

A maximum likelihood spectral transformation (MLST) technique is proposed for rapid speech recognition under mismatched training and testing conditions. Speech feature vectors of real-time utterances are transformed in a linear spectral domain such that a likelihood of the utterances is increased after the transformation. Cepstral vectors are computed from the transformed spectra. The MLST function used for the spectral transformation is configured to handle both convolutional and additive noise. Since the function has small number of parameters to be estimated, only a few utterances are required for accurate adaptation, thus essentially eliminating the need for training speech data. Furthermore, the computation for parameter estimation and spectral transformation can be done efficiently in linear time. Therefore, the techniques of the present invention are well-suited for rapid online adaptation.

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